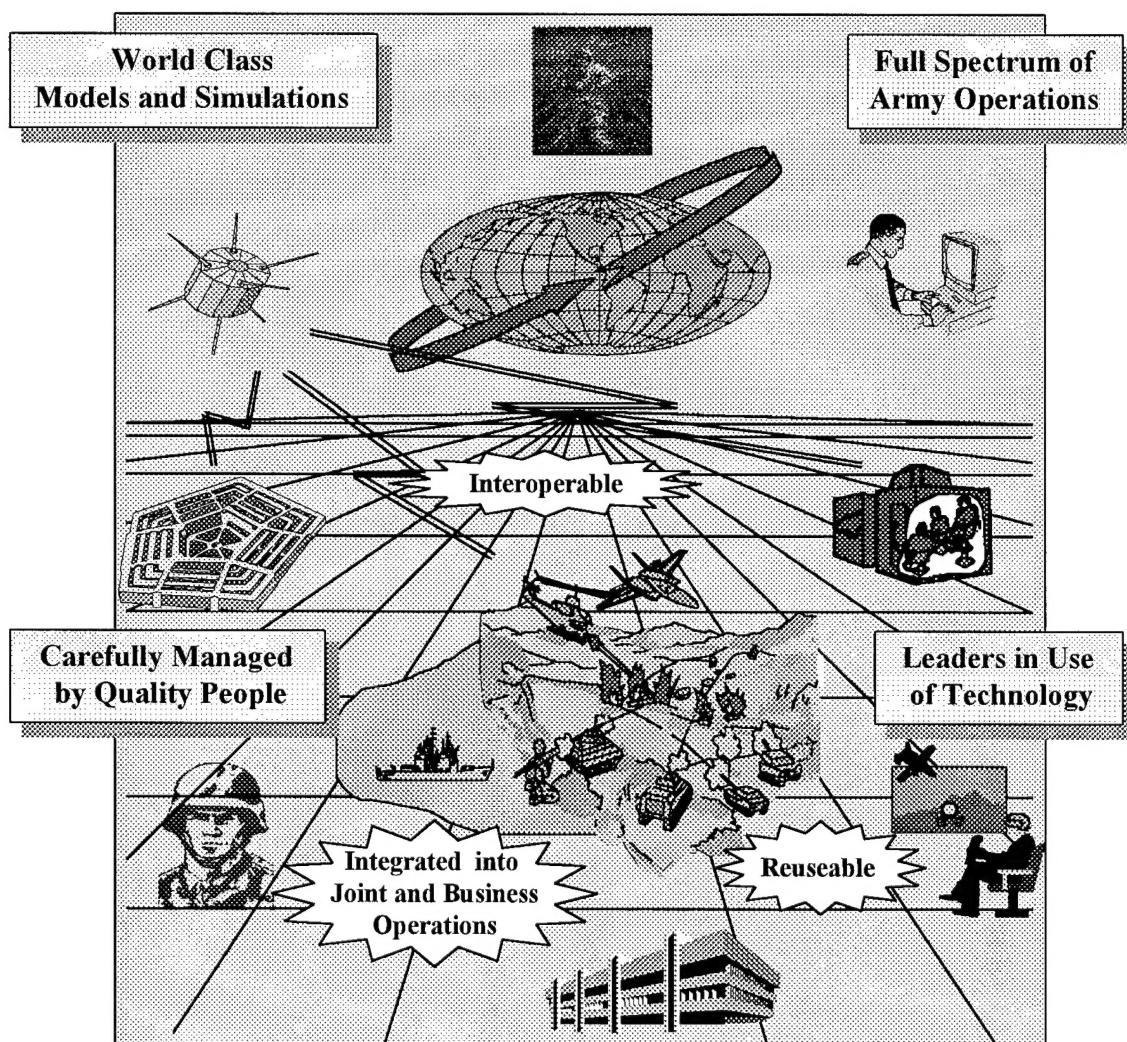


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# The Army's Vision for Models and Simulations (M&S) After Next



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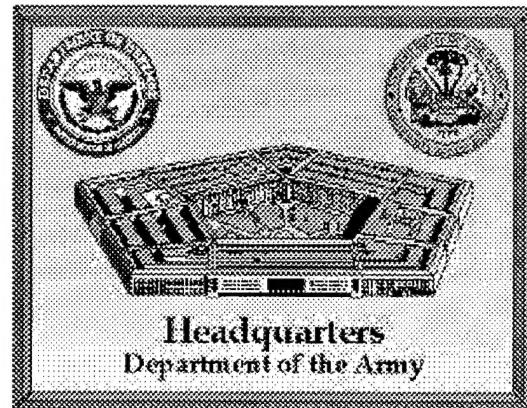
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The Army Model and Simulation Office  
Headquarters, Department of the Army  
Office of the Deputy Chief of Staff for Operations and Plans (DAMO-ZS)  
September 1997

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## FOREWORD

The Army has long recognized the value of Models and Simulations (M&S). We use M&S in every facet of Army operations. We train at all levels and across the globe using M&S. Our key decisions consider analytical results derived using M&S. We use M&S to improve the quality of our acquisition process and the products we deliver to our soldiers. In short, M&S are vital tools for accomplishing our mission.

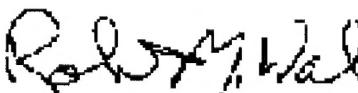


Over the past few years, we have launched several major programs to improve the effectiveness of our M&S assets. We have also revised the way we manage our M&S investments to make more efficient use of our resources. It is now time to look to the future.

*Army Vision 2010* provides a solid blueprint for the Army's contribution to *Joint Vision 2010*. The Army After Next project continues to describe the key factors affecting our operations in the far term. As we plan the Army's path to the future, we must also plan to evolve our vital M&S capabilities so that they remain relevant to our needs.

*The Army's Vision for M&S After Next* sets the stage for moving our M&S to the future. This document defines a future setting for the Army's M&S and outlines the components of a strategy to achieve the required capabilities. The vision portrays an end-state of world-class M&S supporting the full spectrum of Army operations. M&S will continue to be a vital tool for the force. Since M&S will play an increasing role in how the Army acquires its capabilities for Army After Next, Simulation Based Acquisition must be incorporated as an integral part of the M&S vision. We intend to manage M&S as a core enabling competency, supporting all our core capabilities and processes. The Army will maintain its leadership role in the Department of Defense; pre-eminent in the application of M&S to the art and science of Land Operations and the representation of the dynamics of leadership and human behavior.

As Co-Chairs of the Army M&S General Officer Steering Committee (AMS GOSC), we approve this document as a basis for the next Army Model and Simulation Master Plan. We commend it to all with an interest in the success of our Army. Our M&S will provide the foundation for much of our future. Soldiers are our credentials!

  
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Co-Chair, AMS GOSC

  
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# The Army's Vision for Models and Simulations (M&S) After Next

## I. Purpose

Models and Simulations (M&S) provide one of the key tools the Army uses to meet its Title 10 responsibilities to organize and sustain highly trained and properly equipped forces for use by the Combatant Commanders-in-Chief (CINCs). To ensure the Army can continue to shape and exploit advancing M&S technology, the Army Model and Simulation Office (AMSO) has begun updating the Army's M&S strategy. *The Army's Vision for M&S After Next* accomplishes the first steps in that process. The vision statement identifies a desired set of future M&S capabilities and lays the foundation for developing the strategy to achieve those capabilities. As the strategy becomes refined, AMSO will use it as the basis for the next edition of the Army M&S Master Plan.

## II. Introduction

Significant changes have occurred over the past several years in the M&S and related communities. After discussing these changes, *The Army's Vision for M&S After Next* outlines a process for updating the Army's M&S strategy that puts the vision statement in the broader setting of a well-defined strategic framework. The process includes stating assumptions that establish the context for future M&S and examining current guidance prior to formulating the vision statement. The vision statement then serves as a common point of departure for creating a strategy that prepares Army M&S for the future instead of merely responding to the past.

### A. Background

The second edition of the Army M&S Master Plan (1995) presented the Army's plan for embracing the power of Distributed Interactive Simulation (DIS). The plan focused on the development of standards to support the creation of valid, interoperable warfighting simulations. The plan introduced the three domains of Training, Exercises, and Military Operations (TEMO); Advanced Concepts and Requirements (ACR); and Research, Development, and Acquisition (RDA) as a framework for defining M&S purposes.

In the two years since the publication of the plan, significant changes occurred in the M&S community. The standards for the Department of Defense (DoD) common technical framework, most notably the High Level Architecture (HLA), began supplanting the DIS standards for interoperability. The leadership of the Army strengthened the management roles of the three domains. They also formed the AMSO, expanding the scope of the department-level management of M&S. As a final example, the Commander, Training and Doctrine Command became the approving authority for all

Army M&S requirements. Each of these changes affected the way the M&S community operates to serve the Army.

Changes also occurred in the broader community served by M&S. The Force XXI process made notable advances in preparing the Army for the 21st Century. The publication of *Joint Vision 2010* established new concepts and a new lexicon for describing future capabilities. The Army After Next program started to investigate the major factors that will affect the Army in the years 2010-2025. The Chief of Staff of the Army published *Army Vision 2010* as the blueprint for the Army contribution to *Joint Vision 2010* that linked the Force XXI process to the Army After Next. As each of these changes shed more light on the Army's future, they presented new challenges for the M&S after next.

The Army M&S Master Plan formalizes and promulgates the Army's strategy for overcoming M&S challenges and moving to the future. The next edition of the Army M&S Master Plan, due by the end of FY 97, will help the M&S community prepare for the upcoming Program Objective Memorandum (POM) for Fiscal Years 2000-2005 (FY 00-05). The plan will set the direction for the Army M&S Investment Plan and serve as a guide for all Army organizations.

### ***B. Strategic Framework***

The vision fits into a framework for building a strategy that drives the planning process. The strategic framework used here consists of seven pieces: assumptions about the future, current guidance, the vision statement, guiding principles, challenges, components of the strategy, and objectives. The path to defining the vision and then the strategy progresses through the framework in several steps. This document goes as far as identifying components of the strategy. Completing the strategy for the Army M&S Master Plan will require determining the detailed objectives for each component of the strategy and prioritizing among the objectives.

## **III. Future Context**

A vision statement describes capabilities and conditions that will meet the anticipated requirements of the future. Thus to craft a stable vision, one begins by defining the future context for the vision. One fixes a point in time and predicts (makes assumptions about) the key factors affecting M&S requirements and developments at that time. A broad set of predictions will enable one to create a robust picture of the future. One can then step into the future and turn around to look back to the present. Looking back, one can identify the challenges the Army must overcome to achieve the vision.

The assumptions that follow concentrate on the period between 2010 to 2025, the Army After Next years. These years match the timeframe chosen by senior Army and Joint leadership for envisioning the future. They also mark the time when the current generation of simulations under development will reach the end of their effectiveness. Finally, given the development timelines for major simulation systems, the next POM build (FY 00-05) should include activities that begin the development process for M&S to support the Army in the year 2010 and beyond.

Many factors will establish conditions and requirements for future M&S. In what follows, assumptions about these factors are grouped into four categories: operational environment, M&S technology, management trends, and resources.

### A. Operational Environment

The Army must ensure that its M&S stay relevant to the needs of the force. These needs will be driven by *Joint Vision 2010*, Army After Next, and *Army Vision 2010*. Figure 1 provides a snapshot of Joint Vision 2010. Quality forces and leadership provide the foundation to success during peacetime engagement, the deterrence and prevention of conflict, and when called upon, the fighting and winning of wars. The new operational concepts, enabled by the dynamic changes in the technical and geo-political environments, will require new models for understanding and representing full spectrum dominance throughout the mission space.

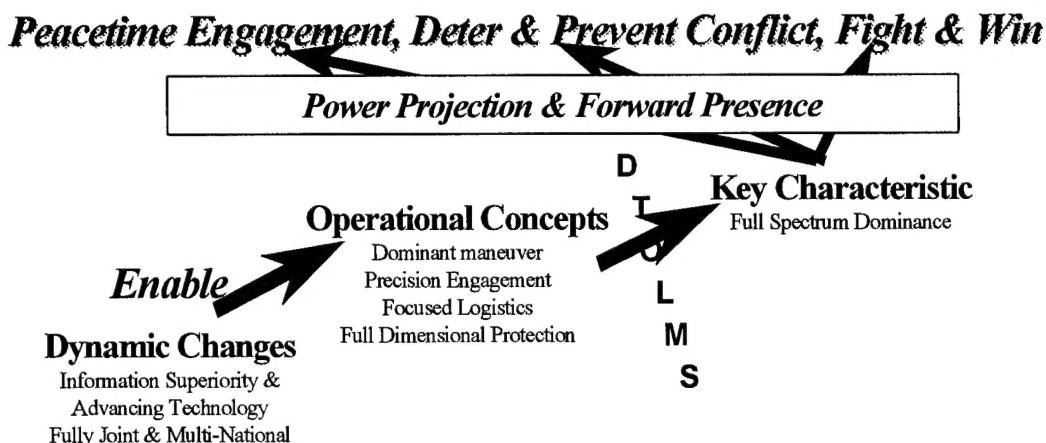


Figure 1. Snapshot of Joint Vision 2010.

Army After Next looks beyond *Joint Vision 2010* with the intent of ensuring the Force XXI process stays connected to the distant future along with the Army research and development programs. Key challenges include adjusting to the effects of information technology on operations and organizational structures. Shortened decision cycles and more cellular units will increase the demands on supporting M&S. While technology will drive major changes in operational performance, human and organizational behavior will still dominate the effects of technology on mission success.

As a companion document to *Joint Vision 2010*, *Army Vision 2010* provides the conceptual template for the Army's contribution to the Joint Force in the year 2010. It serves as the "linchpin" between the Force XXI process and Army After Next; "a necessary and intermediate objective en route to the next generation" force. No longer focused primarily on warfighting, the context for future M&S spans the full gamut of military operations. *Army Vision 2010* proposes the seven mission areas in Figure 2. These areas clearly define the full spectrum of required Army capabilities. Future M&S will have to portray scenarios in each of these areas tailored to fit the needs of each user. The heavy emphasis on human behavior in these mission areas presents special

challenges for M&S. Furthermore, *Army Vision 2010* lists simulations as one of the key technologies required for obtaining Dominant Maneuver and Precision Engagement.

Each of the above visions for future operations discusses the effect of changes in information technology and implies requirements for future M&S. Assumptions about the future of M&S technology will help provide the context for meeting those requirements.

- **Defending or Liberating Territory:** Major and Lesser Regional Conflicts
- **Punitive Intrusion:** Counter-Drug, Counter-Terrorism, Counter-Proliferation
- **Conflict Containment:** Military Operations Other Than War
- **Leverage:** Theater Missile Defense, Space Applications, C4I Systems Integration, Battlefield Awareness
- **Reassurance:** Presence
- **Core Security:** National Missile Defense, Counter Drug, Illegal Immigration, Crime in the Streets
- **Humanitarian:** Disaster Relief, Population Evacuation, Refugee Protection, Cooperation, Exchange and Training.

Figure 2. Seven mission areas of *Army Vision 2010*.

## B. M&S Technology

Creating and operating computer-based M&S demands the integration of a number of technologies. Developers combine technologies ranging from mathematical modeling, to computer-oriented information technology, to psychological models of human behavior to create the dynamic abstractions of reality we call simulations. Long-range M&S technology forecasts usually underestimate the advances driven by the commercial marketplace. Instead of predicting specific levels of computational performance, the following assumptions describe general conditions surrounding future M&S.

By the year 2010 the current "next-generation" simulation environments and systems under development will have surpassed their full operational capability. These programs include the Joint Simulation System (JSIMS) with its supporting Army program Warfighters' Simulation (WARSIM) 2000, the Joint Warfare System (JWARS), and the Joint Modeling and Simulation System (JMASS). After faithful service to a generation of trainers, analysts, testers, and researchers, these programs will be nearing the end of their effectiveness. While they will have established substantial repositories of M&S information, most of that software and data will have been built to represent and meet the requirements of a pre-Army After Next force. At the same time the simulations will have been constructed with turn of the century technology, by then over ten years old.

The information technology, force structure, doctrine, and systems in the Army After Next decades will differ significantly from those employed by the turn of the century Army. The commercial marketplace will have continued its pace of development of more capable systems. Communications, storage, and computational capacities will seem relatively unconstraining when compared to today. Integrated software and hardware (algorithms on chips), real-time databases generated on the fly, and shared holographic visualization will emerge as affordable, state-of-the-practice, items.

The commercial marketplace will have focused on what supports the information exchange requirements of the business, entertainment, and gaming industries. The military will have continued to fund research and development on its niche requirements. Models will exist that capture, to varying degrees of fidelity, human performance. They will account for the effects of training, operational stress, personalities, emotions, physical capabilities, and cognitive processes on human decision making. Intelligent agent simulations will employ these models to mimic human performance. Representations of hierarchical, collective, and individual human behavior will range from low to high-fidelity.

However, despite all the advances in technology, future M&S will still function as limited abstractions of reality; they will not be truth machines. No silver-bullet M&S technology will enable a single model or simulation to meet all the M&S requirements or replace the human decision maker.

### **C. Management Trends**

Continued improvements in information technology will drive substantial changes in the way commanders lead their units and the Services manage their business. The Army's initiatives under the National Performance Review (NPR) will preserve the emphasis on satisfying the needs of the CINCs with a results-oriented, capabilities-based force, focused on core missions.

One can assume that the Services will remain as distinct departments under Title 10. However, their forces will serve CINCs almost exclusively in joint and multi-national operations. CINCs will employ Army forces with significant changes in force structure and doctrine brought about by the Army After Next project. Many operations will require fewer links in the chain of command between sensor, shooter and decision maker with fewer levels between the soldier and the CINC.

While the Army's force structure and doctrine may change, the fundamental competency that the Army brings to joint operations will not. As stated in *Army Vision 2010*,

**“The Army will continue to provide the ability to conduct prompt and sustained operations on land throughout the entire spectrum of conflict.”**

To execute this fundamental competency, the Army will concentrate its management energy and resources on core competencies and enabling competencies. These functions must happen to achieve the fundamental competency and cannot be performed by other DoD or commercial entities.

The Army's core competencies provide the means to meet its responsibilities outlined in Title 10, United States Code. The Institutional Army portion of the Force XXI Campaign Plan defines core competencies in terms of core capabilities and core processes. The major bullets in Figure 3 list the Army's core capabilities. While these core capabilities contribute to operational employment, they do not all affect military operations in an immediate sense. However they do provide essential support for sustaining a high-quality force.

The Army achieves each core capability through the execution of its supporting core processes (the sub-bullets in Figure 3). These processes are distinguished as core because they require the intimate involvement of experienced Army professionals to ensure that they remain relevant and focused on the needs of the force. Together they comprise much of the business arena of the institutional Army.

As the Army evolves to a capabilities-based force, people will continue to use M&S to support each of the core processes. From that perspective, M&S will directly enable the Army to achieve its core competencies in an efficient manner. At the same time, the constant use of M&S by the operational units of the Army for training and mission-related activities will enable the Army to effectively perform its fundamental competency. Thus institutionally and operationally, M&S will continue to be a significant core enabling competency for the Army.

- Direct, Acquire, and Resource the Force
  - Plan, Provide Direction, Obtain & Allocate Resources
  - Manage Information
- Generate and Project the Force
  - Tailor, Mobilize & Project Land Power
  - Support Organizational Training
- Sustain the Force
  - Acquire, Maintain & Sustain Equipment
  - Maintain and Sustain Land Operations
  - Acquire and Sustain Facilities
  - Manage Installations
- Develop the Force
  - Develop Doctrine
  - Develop Requirements
  - Acquire and Sustain People
  - Identify and Develop Leaders

Figure 3. Core Capabilities (●) and Processes (-) for the Institutional Army.

## **D. Resources**

It takes resources to develop, operate, and sustain M&S systems. Assumptions about future resource conditions place affordability constraints on the desired capabilities driven by the assumptions about operations, M&S technology, and management trends.

Resources will continue to be precious. By the year 2010, the aging of the Army's "Big Five" major end items will drive substantial investments for replacing or upgrading almost every major system except for helicopters. Thus, resources for M&S will get close scrutiny.

A smaller number of power projection installations in the continental United States (15) and fewer overseas sites will reduce the demands for resourcing fixed sites. However, the steady pace of military operations could blur the distinctions between Training, Exercises, and Military Operations. Today's TEMO could shift to mostly "MO" with resources going for embedded training and distance learning instead of stand-alone devices on fixed sites. Support for deployed forces, either through direct embedding or linkages, will also require resource planning.

While the Planning, Programming, Budgeting, and Execution System will exist in some form, it will have evolved to compel more visible linkages between investments and core or core-enabling competencies.

## **IV. Current Guidance**

The Army's M&S of today have momentum. Policy and programs continue to move forward based on current requirements and guidance. Thus, when formulating a strategy for the future, one must consider the guidance governing the inertia and flow of current programs to ensure the path to the future begins from a firm understanding of the present.

### **A. Current Visions for M&S**

Two major documents established the current visions for Army M&S. The *DoD M&S Master Plan* describes the DoD vision for M&S in its Chapter 2. The *Army M&S Master Plan* of 1995 also uses its Chapter 2 for discussing the Army's vision for M&S.

The DoD vision for M&S focuses on "*providing readily available, operationally valid environments for use by the DoD components.*" The vision encompasses M&S ranging from high-fidelity engineering models to highly aggregated campaign-level simulations involving joint forces. Given the objectives and timelines in the strategy, the timeframe follows the turn of the century. The strategy focuses on common aspects that facilitate M&S interoperability such as the common technical framework for M&S.

As discussed earlier (Background, pg. 2), the Army's 1995 vision for M&S focuses on the development of standards to support the creation of "*Valid warfighting simulations as vital tools for the Force XXI Army.*" The vision aligns with the DoD M&S vision with the primary emphasis being on the formulation, development, and approval of standards for common aspects of M&S.

## **B. The Army Vision**

The Vision of the Chief of Staff of the Army provides the focal point for all activities within the Army. Figure 4 shows the Army vision from Army Vision 2010.

The U.S. Army Vision... *The World's Best Army, a Full Spectrum Force Trained and Ready for Victory.*

**A Total Force** of quality soldiers and civilians:

- A values-based organization
- An integral part of the Joint Team
- Equipped with the most modern weapons and equipment the country can provide
- Able to respond to our Nation's needs
- Changing to meet challenges of today . . . tomorrow . . . and the 21st Century

Figure 4. The Army Vision.

## **V. The Army's Vision for M&S After Next**

The Army's vision for M&S After Next consists of the Vision Statement, the Guiding Principles, a set of Challenges, and the Components for the strategy.

### **A. The Vision Statement**

The vision statement in Figure 5 begins with a clear declaration of the desired end state. To have the world's best Army, our M&S must provide world-class support across all aspects of Army operations envisioned by *Army Vision 2010* and for the Army After Next. The Army must also remain fully involved in implementing its capabilities for achieving full spectrum dominance in joint community simulations.

The Army's M&S will serve as tools for use by the Total Force of Active and Reserve components. Instead of a single tool, the Army will have a toolbox of general purpose and special tools that enable users to address missions throughout the operational and business arenas. Future M&S will seem ubiquitous, integrated into all aspects of operational and business decision-making processes and systems. Much of the border separating M&S from Command and Control systems will fade away. Users will no longer have to think about the technology of linking live, virtual, or constructive simulations; they will focus on the assigned mission and then tailor "Synergistic Realities" to meet their needs. The capabilities provided by these synergized realities will exceed the capabilities of any single simulation environment. Customers will compose valid simulations, from interoperable components with the necessary fidelity in the functions critical for their given problem, while remaining within their available resources.

- **World Class Models and Simulations** supporting the full spectrum of Army Operations in the 21st Century.
- **Tools for the Total Force:**
  - Fully integrated into operational and business decision making processes and systems.
  - Credible “Synergized Realities” for education, training, analysis, acquisition, and research.
  - Customer-focused sets of interoperable systems of varying fidelity.
- **Carefully Managed as a Core Enabling Competency**
  - Cultivated Infrastructure energized by quality people.
  - Prioritized Investments.
  - Responsive to Change.
- **Army maintains leadership** in the use of technology for more effective M&S support.
  - Pre-eminent in art and science of simulating joint operations on land.
  - DoD lead in the representation of leadership and human dynamics for operational command and control.

*Figure 3. The Vision Statement for Army M&S After Next.*

As the Army continues to utilize M&S to meet its vision of a total force equipped with the most modern weapons and equipment, it must fully embrace Simulation Based Acquisition (SBA). SBA is a process for integrating M&S tools and technology across acquisition functions and throughout program phases. In order to realize the full potential of M&S to acquisition, program managers must plan for M&S in terms of how it can be applied from the beginning to the end of the acquisition life cycle.

The Army will need a relevant, vibrant M&S capability to meet the operational requirements for Dominant Maneuver and Precision Engagement as well as the institutional requirements to efficiently execute the core processes. Thus M&S should be declared a core enabling competency for the Army. The Army must retain and carefully manage its investments in M&S to preserve infrastructure and quality M&S professionals. Cultivating the infrastructure implies making sound business decisions tempered by operational requirements to support the needs of the force. Leaders will continue to prioritize their investments to support their missions. At the same time, the Army will continue to prepare for the future, ensuring that its M&S stay responsive to the user's needs.

The discussion so far has been internal to the Army. The Army also has a role to play in DoD M&S. The Army will sustain its pre-eminence in the art and science of using M&S for representing landpower in joint operations. At the same time, the Army has a special need for the representation of the human dynamics of military operations. Leadership forms one of the fundamental components of combat power. When it comes to representing leadership and human dynamics related to operational command and control, the Army cannot depend upon others to have the initiative or expertise to provide the appropriate technology. Out of necessity, the Army will be the DoD lead in this area.

## B. Guiding Principles

Guiding principles, considered as fundamental and enduring tenets, help in shaping the vision as well as future decisions to implement the strategy. The principles in Figure 6 apply to M&S today and should endure throughout the path to the future.

- Support Users Across the Full Spectrum.
- Resource as a Value-Added Commodity
- Develop Efficiently
- Sustain as a Core Enabling Competency

Figure 6. Guiding Principles.

Full spectrum support includes the operational and business spectrums. It also implies that no single model fits every user's needs. The Army will continue to have multiple, although fewer, models. Resourcing these models will depend upon the concept that M&S are merely a means to an end, not the end in themselves. The Army will not be able to afford the "Best Technology;" future M&S investments must seek out value-added "Right Technology." Efficient development provides the impetus for the twin goals of fostering interoperability and reuse based on standards and incentives. Sustaining M&S as a core enabling competency implies the need to educate the overall force, develop M&S professionals, cultivate an infrastructure, conduct research, and enable improvement and growth for M&S. One of the key determiners of future victory will be the ability to adapt, not just produce. To support the Army's ability to adapt on the field and in the staffs, the Army's M&S must be able to adapt as well.

## C. Challenges

Looking back from the future, one can see multiple paths to the envisioned end state. Along each path lie challenges and one sees most clearly the close-in challenges, many common to all paths. Unless the Army overcomes these immediate challenges, any path to the future is at risk. The eight challenges in Figure 7 each present a potential hurdle.

The Army has made major strides in its management of M&S in recent years. However, as the Army continues to change, the management systems that have been put in place need to evolve to remain relevant. Proper oversight and visibility must be balanced with the need for decentralized execution of critical M&S activities.

Although M&S supports the entire Army, the development, acquisition, and sustainment of M&S falls squarely into the business arena of the Army. Current policy defining life-cycle responsibilities and resourcing for Army M&S (the "M&S business model") appears in different regulations and policy statements. This fragmentation makes it difficult to ensure consistent policy and to organize interactions across organizations and with other communities. The current "M&S business model" contains insufficient incentives for promoting efficient development among competing program managers. To save program costs, managers often defer from being the first to build a reusable component.

- Management Entropy
- Fragmented Business Model
- Requirements Focus and Integration
- Resources
- Technical Challenges
- Allocation of Research Effort
- Overlapping Infrastructure
- Educate the Force

*Figure 7. Challenges*

Although much has been accomplished on maturing the requirements integration process, challenges still remain with integrating M&S with C4I systems, working outside the Army, and working with commercial developers on non-Army contracts to common purposes.

Meeting the goals of the NPR will continue to challenge the M&S community to conserve scarce resources. Defining metrics for M&S should improve the measurement of the value-added of M&S investments and strengthen the tie between M&S and the core competencies. An additional challenge will be achieving balanced capabilities and priorities across mission areas. The Army must continue to commit resources to lead and participate in DoD and Joint programs to maintain its momentum and visibility in those communities.

Technical challenges will continue, especially in the areas of defining standards for reuse of algorithms and data of varying fidelity and the representation of leadership and human dynamics during operations.

Efficient allocation of M&S research effort among commercial, DoD, and Army sources will require more effective prioritization of technical challenges and the acceptance of risk.

As the Army moves to fewer installations and faster more reliable networks, future infrastructure requirements may be less than today. The presence of overlapping or excessive legacy infrastructure will drain resources. At the same time, growth in new technology arenas will drive the need for new infrastructure. Planners must consider tradeoffs among centralized and decentralized control, resourcing, and scheduling to ensure efficient use of infrastructure investments.

Educating the force to develop and use M&S efficiently will remain a challenge as M&S capabilities change at a rapid pace.

#### **D. Components of the Strategy**

Management responses to the challenges form the basis for a strategy to reach the vision. Each component in Figure 8 contains a subset of management responses grouped according to existing AMSO mission areas. Each of these components may have some basic policy guidance as well as specific objectives based on the corresponding challenges. Note that several of the components contain Objectives from the 1995 Army M&S Master Plan. This strategy has more components because the DA has expanded its role in M&S management. The strategy must now address management, requirements, and investments, in addition to policy, standards, infrastructure, and education.

- Management
- Requirements Focus and Integration
- Resourcing/Investments
- Policy/Developing Standards (Objectives 1-4 in the current Master Plan)
- Infrastructure (Objective 5)
- Education (Objective 6)

Figure 8. Components for the strategy.

### **VI. Next Steps**

This vision document only discusses the beginning steps on the path to the updated Army M&S Master Plan. The next steps will refine and document the strategy in the Master Plan in time to implement the initial portions for the next POM (FY 00-05).

The strategy must support the Army's Strategic Management Plan. Objectives and associated metrics need to be defined for each component in Figure 8. Supporting plans will provide near-term guidance and describe actions to be taken to achieve each objective. Objectives will also have to be prioritized. These objectives could include formalizing the Army's M&S business model, detailing linkages with the Army Enterprise Strategy, and guidance for the years 2000-2009. Near to mid-term guidance will address areas such as successfully transitioning from legacy systems to HLA-compliant, next-generation Service and Joint simulation systems, developing standards, developing to standards, areas of management emphasis, infrastructure reorganization, and the M&S technology review.

### **VII. Conclusion**

*The Army's Vision for M&S After Next* supports the total Army, incorporating and supporting the needs of the M&S community. Each organization understands its missions and necessarily has its own vision for the future. This document provides a framework within which Army M&S communities can advance as one team towards a common end-

state, with flexibility for the users while realizing the benefits of cross-organization policy and infrastructure.

The Army After Next will build upon the operational concepts in *Joint Vision 2010* and the technological wonders of the information age. The Army's M&S After Next will provide vital tools for organizing, training, supplying, and equipping forces ready for victory for assignment to Unified Combatant Commands. Creating a common vision and supporting strategy will set the stage for the future: Quality people using world-class models and simulations providing full spectrum support to our leaders and soldiers.

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## IX. Acronyms

ACR	Advanced Concepts and Requirements
AMS GOSC	Army Model and Simulation General Officer Steering Committee
AMSO	Army Model and Simulation Office
CINCs	Commanders in Chief
DA	Department of the Army
DIS	Distributed Interactive Simulation
DoD	Department of Defense
FY	Fiscal Year
HLA	High Level Architecture
JMASS	Joint Modeling and Simulation System
JSIMS	Joint Simulation System
JWARS	Joint Warfare System
M&S	Model and Simulation or Models and Simulations
NPR	National Performance Review
POM	Program Objective Memorandum
RDA	Research, Development, and Acquisition
SBA	Simulation Based Acquisition
TEMO	Training, Exercises, and Military Operations
WARSIM	Warfighters' Simulation

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